POSTER SESSION

1217 Miscellaneous Topics in Outcomes Research

Tuesday, April 01, 2003, 3:00 p.m.-5:00 p.m.
McCormick Place, Hall A
Presentation Hour: 3:00 p.m.-4:00 p.m.

1217-52 Metanalysis of Antiarrhythmic Drugs for Conversion of Atrial Fibrillation and the Maintenance of Sinus Rhythm: Combining Efficacy and Adverse Effects

Leonardo Tamariz, Robert McNamara, Eric Bass, Johns Hopkins University, Baltimore, MD

Background: Atrial fibrillation (AF) is the most common arrhythmia encountered in clinical practice. The purpose of this analysis is to summarize the evidence on the efficacy and adverse effects of agents now available for treatment of atrial fibrillation. **Methods:** MEDLINE and the clinical trial database of the Cochrane Collaboration were searched from 1948 to August 2001 for all randomized clinical trials reporting on the efficacy and adverse effects of drugs used in the conversion of AF and the maintenance of sinus rhythm. We extracted data on study quality, baseline characteristics, conversion of AF, maintenance of sinus rhythm and adverse effects. A fixed or random effects model was used taking into consideration the heterogeneity of the studies. **Results:** We identified 36 randomized clinical trials (RCTs) on conversion of AF and 18 RCTs on maintenance after conversion. The aggregate odds ratio for conversion of AF, compared to a control treatment (placebo, digoxin, diltiazem or verapamil) was 30.7 for ibutilide (95% confidence interval (CI) 10.9-86), 12.8 for dofetilide (CI 5.1-31.8), 13.2 for flecainide (CI 6.4-27.4), 3.9 for propafenone (CI 2.3-6.8), 3.2 for amiodarone (CI 2.5-5.1), 2.9 for quinidine (CI 1.2-6.9) and 1.1 for sotalol (CI 0.1-6.9). The odds ratio for maintenance of sinus rhythm, compared to a control treatment, was 6.5 for amiodarone (CI 4.1-10.5), 3.0 for propafenone (CI 2.0-4.7), 3.5 for quinidine (CI 1.4-8.6), 2.5 for sotalol (CI 1.7-3.7), 4.3 for flecainide (CI 1.3-14.1) and 2.9 for disopyramide (CI 1.4-6.1). The most efficacious drugs were associated to the highest risk of adverse effects. For the conversion of AF ibutilide and dofetilide had a significant risk of ventricular arrhytmias and for the maintenance of sinus rhythm amiodarone had a siginificant risk of adverse effects, however these were mostly noncardiac. **Conclusion:** Strong evidence of efficacy exists for using ibutilide, dofetilide, flecainide, propafenone or amiodarone for conversion of AF, and for using amiodarone, propafenone, quinidine or sotalol for maintenance of sinus rhythm. However the decision in selecting an antiarrhytmic drug should also be based on the potential risk of adverse effects.

1217-53 The Impact of Implanting Cardioverter-Defibrillators in Patients Who Meet the Multicenter Automatic Defibrillator Implantation Trial-II Criteria on the Health Care System at a Tertiary Referral Center

Sana M. Al-Khatib, Eric Peterson, James Jollis, Yun Li, Kevin Anstrom, Christopher O'Connor, Kerry Lee, Linda Shaw, Robert M. Califf, Duke University Medical Center, Durham, NC

Background: The recently published Multicenter Automatic Defibrillator Implantation Trial-II (MADIT-II) showed that patients with history of myocardial infarction and EF of 30% or less have a significant reduction in mortality when treated with an implantable cardioverter defibrillator (ICD). The purpose of this study is to determine the impact of implanting an ICD in patients who meet the MADIT-II criteria on the health care system at a tertiary referral center.
Methods: We used the Duke Cardiovascular Disease Database that has systematically collected the in-hospital clinical experience and the long-term follow-up of all cardiology patients who undergo a cardiac catheterization at Duke Medical Center. Of the patients who underwent cardiac catheterization between 1986 and 2001, we determined the number of patients who would qualify for an ICD based on the MADIT-II results. Extrapolating cost data from the Antiarrhythmic Versus Implantable Defibrillators and MADIT-I trials, we estimated the cost of ICD implants in these patients. We also estimated the manpower needed to implant an ICD in these patients.
Results: From 1986 through 2001, 51,001 patients underwent at least one cardiac catheterization. Of these, 1392 (2.7%) met the MADIT-II inclusion criteria. The cost of implanting an ICD in these patients would be 44,000,000. The cost of implanting the ICD in these patients and managing them over three years would be $141,000,000. At least seven full time electrophysiologists would be required to meet the need for additional ICD implants within the next year.
Conclusions: Detailed consideration of our coronary disease population over 15 years suggests that the proportion of patients who meet the MADIT-II criteria is relatively small. Despite this small number, our data indicate that the implantation of additional ICD's in our institution will have substantial implications regarding manpower and cost.

1217-54 Clinical Impact of Hand-Carried Cardiac Ultrasound in the Medical Clinic Performed by Medical Residents

Lori B. Croft, Daniel Jacoby, Ira Galin, Thomas McGinn, Martin E. Goldman, Mount Sinai Medical Center, New York, NY

Background: Hand-carried cardiac ultrasound (HCU) can provide rapid, bedside assessment of ventricular and valvular function have only been utilized by cardiologists or technologists. Proper use of these potential echo-stethoscopes would empower all physicians to perform a point of care (POC) brief, diagnosis focused echocardiogram (echo) to improve bedside cardiac assessment to complement their physical exam.
Objective: To determine (1) whether medical residents with brief echo training can effectively acquire and interpret HCU POC echo's and (2) to determine the impact of these echo's on patient (pt) care in their outpatient clinic practice.
Methods: First and second year medical residents underwent a 2 1/2 day hands-on tutorial to perform and interpret a POC echo using the Phillips Optigo® (Andover, MA) HES. The echo consisted of four views (parasternal long and short, apical four and two chamber) to define left and right ventricular function and pericardial effusions. Color Doppler interrogated for significant valvular abnormalities. No pulsed or continuous wave Doppler or M-mode was used. The echo's were overread and repeated by an echocardiologist who evaluated the residents' technical and interpretive skills.
Results: Residents performed 53 echo's in the outpatient clinic as part of their routine pt evaluation. The mean time for their echo was 4.3 ± 1.2 minutes. The residents performed technically diagnostic echo's in 94% and interpreted their studies correctly in 89% of pts. Residents missed 6 major echo findings. Residents reported their echo reinforced or changed their pre-echo diagnosis in 76% of the cases and induced a change in management in 38%.
Conclusions: This pilot study demonstrated that it is feasible to train medical residents to perform, interpret and integrate a rapid HCU POC echo after a short training period. Residents' echo's had a significant impact on their pt care. Implications of this study support formally educating medical residents to utilize a bedside echo-stethoscope as part of their routine pt care.

1217-55 Development of a Clinical Quality Care Index Predicts Hospital Readmission for Heart Failure

Ricardo Vicuna, Andrew J. Krainik, Jun Chiong, Stephanie H. Dunlap University of Illinois at Chicago, Chicago, IL

Background: Despite therapeutic advances in heart failure (HF), readmission rates remain high and under use of ACE inhibitors (ACEI) in HF patients (pts) at hospital discharge is prevalent. Multiple quality care indicators for assessing in-hospital care of HF pts. have been published. From the literature, 9 clinical indicators were chosen and combined into a Quality Care Instrument (QCI) for assessing in-hospital care of HF pts. The purpose of this study was to investigate the association between the QCI score and risk for HF readmission.
Methods: All in-pt. medical records from our institution with a primary discharge diagnosis of HF occurring during fiscal year 1996 were retrospectively examined and assessed for readmission through 1998. The 9 clinical indicators were: assessment of LV function; ACEI therapy (tx); target ACEI dose; multiple weight measurements; hydralazine-nitrate tx if ACEI contraindicated; increased diuretic tx from admission; digoxin tx; aspirin tx in ischemic pts; sodium/fluid restriction and/or dietary consult. Drug tx was not scored if there were contraindications to the drug being evaluated. The overall QCI was calculated as [number of indicators present ÷ number of applicable indicators]. Cox proportional hazards models were constructed using the QCI as a predictor for readmission, controlling for demographic and clinical variables.
Results: The study was comprised of 223 pts (53% female, 65% black, 19% Hispanic, 14% white) with mean age of 60 ± 15.3 yrs(SD). QCI scores ranged from 0-1, with a median of 0.75. 84 pts. (38%) were readmitted at least once during 2 yr. follow-up. Readmission rates at 30, 90, 180, and 365 days were 6%, 15%, 22%, and 30%, respectively. Records with a QCI score in the lowest quartile (<0.60), were at highest risk for HF readmission (RR = 2.06, p=0.01) and for all other cardiovascular causes (RR=1.86, p=0.02).
Conclusion: Use of the Quality Care Instrument was predictive for readmission for both HF and all cardiovascular causes. The analysis suggests that implementation of the 9 indicators in the QCI during HF hospitalizations may limit future hospitalizations for both HF and all cardiovascular causes.

1217-56 Time Course of Morbidity and Mortality After a Myocardial Infarction Complicated by Left Ventricular Systolic Dysfunction or Heart Failure

J. G. Cleland, J. Kjekshus, K. Dickstein, S. Orn, M. Romo, University of Hull, Kingston upon Hull, United Kingdom

Background: Patients with major left ventricular systolic dysfunction (LVSD) or heart failure after a myocardial infarction (MI) have a poor prognosis, but the time course of morbidity and mortality are poorly described in patients receiving contemporary therapy.
Aims: To describe the time course of stroke, MI and death in patients who have survived an MI complicated by LVSD or heart failure. **Methods:** 5477 patients with MI with evidence suggesting major cardiac damage were enrolled in the OPTIMAAL trial and followed for a mean of 2.7 years. Events, including death, resuscitated cardiac arrest (RCA), MI and stroke, were independently adjudicated. **Results:** The mean age was 67.4 years. At study end, 4038 events had been evaluated including 946 deaths, 988 MI's, and 300 strokes. The distribution of events in relation to time from randomization is shown in the table.

Events and (Cumulative % of all Events Adjudicated)

	Death (N=946)	RCA (N=130)	MI (N=988)	Stroke (N=300)
0-30 days	235 (24.8%)	52 (40.0%)	252 (25.5%)	67 (22.3%)
30-180 days	202 (46.2%)	28 (61.5%)	270 (52.8%)	34 (33.6%)
180-365 days	148 (61.8%)	16 (73.8%)	147 (67.7%)	51 (50.6%)
>365	361 (100%)	34 (100%)	319 (100%)	148 (100%)

Conclusions: There is a high initial and then a rapid decline in mortality and, to a lesser extent, other events after myocardial infarction complicated by LVSD or heart failure.